

DOCKET FILE COPY ORIGINAL

ORIGINAL

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

RECEIVED

DEC 1 - 1997
FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of

Amendment of Part 2 of the
Commission's Rules to Allocate the
455-456 MHz and 459-460 MHz bands
to the Mobile-Satellite Service

)
)
)
)

ET Docket No. 97-214

**COMMENTS OF THE
NATIONAL ASSOCIATION OF BROADCASTERS**

Herein the National Association of Broadcasters ("NAB")¹ responds to several parts of the Commission's *Notice of Proposed Rule Making* in the above-captioned proceeding.² In this proceeding the agency proposes to reallocate the 455-456 MHz and 459-460 MHz bands to the so-called "Little LEO (Low Earth Orbit)" satellite service for operation on a co-primary basis with incumbent users of these bands. NAB strongly opposes the reallocation of the 455-456 MHz band -- a band currently used heavily for "remote pick-up" purposes by broadcast stations -- to Little LEO co-primary operation. These remote pickup stations are licensed pursuant to Part 74 of the Commission's Rules and play an integral role in the local service of broadcast stations.

¹ NAB is a nonprofit, incorporated association of television and radio stations and networks which serves and represents the American broadcast industry.

² *Notice of Proposed Rule Making* in ET Docket No. 97-214 ("Notice"), ___ FCC Rcd ___ (1997), 62 Fed. Reg. 58932 (October 31, 1997).

0212

It is our view -- based on the technical considerations presented below -- that such a reallocation, under the technical parameters being considered by the FCC, would threaten the service provided by these remote pick-up operations. Such a result would be consistent with neither the United States international obligations nor with fundamental concepts of rational spectrum allocation policy.

In the *Notice*, the Commission implied that Little LEO uplink transmissions in the 455-456 MHz band would be limited to 450 milliseconds in duration.³ This implication was based on the fact that a similar restriction is placed on Little LEO uplink transmissions in the 148-149.9 MHz band.⁴ The 148-149.9 MHz uplinks are also restricted to one percent of the time during any 15-minute period, and there must be at least 15 seconds between consecutive transmissions.⁵

If the restrictions on 455-456 MHz uplinks were similar to those that apply at 148-149.9 MHz, then in any given 15-minute period, the maximum number of separate 450 millisecond transmissions from any one transmitter would be 20 (15 minutes x 0.01 / 0.450 seconds per transmission). If these 20 transmissions were spaced evenly over the 15 minutes, then each transmission would be located within its own 45-second window. However, only 0.45 seconds of each 45-second window would be taken up by the actual transmission, leaving 44.55 seconds for other transmitters to use this spectrum during the same window. Thus, ninety-nine separate transmitters could send 0.45-second transmissions in the remaining 44.55 seconds; so the maximum number of transmitters on

³ *Notice* at 12.

⁴ See United States footnote 323 to the Commission's Table of Frequency Allocations, 47 CFR Section 2.106, footnote US323.

⁵ *Id.*

any one frequency (assuming they are all operating at the maximum capacity allowed) would be 100.

The *Notice* indicates that Little LEO systems would operate with a channel bandwidth of 2.5 kHz.⁶ The 455-456 MHz band, when broken into 2.5 kHz segments, contains 400 channels. If it is assumed that all Little LEO transmitters in this band will operate at the maximum capacity allowed, then the maximum number of transmitters associated with any one satellite receiver is 40,000 (100 transmitters per channel x 400 channels). If it is assumed that all Little LEO transmitters will not operate at the maximum capacity allowed, then even more uplink transmitters can be associated with any particular satellite receiver. Clearly, the number of 455-456 MHz Little LEO uplinks in any given area could be in the tens of thousands -- or even the hundreds of thousands -- if multiple Little LEO satellite receivers are in view. This is a tremendous number of radio signals being transmitted toward the sky.

The *Notice* reports that there are over 25,000 Part 74 auxiliary broadcast transmitters authorized to use the 455-456 MHz band.⁷ Associated with these transmitters are over 25,000 receivers, each one of which could experience harmful interference if a 455-456 MHz Little LEO uplink were pointed in its direction. A single uplink, by itself, would not be a significant interference threat if its operation were restricted as described above. However, if the Little LEO service were implemented in this band there eventually would be a multitude of uplinks in any given area (tens or hundreds of thousands, as noted above), all operating simultaneously. The cumulative impact of all of these transmissions on auxiliary broadcast receivers would be no

⁶ *Notice* at footnote 31.

⁷ *Notice* at 12.

different than if continuous Little LEO uplink transmissions were permitted in the 455-456 MHz band without any duty cycle requirements. This type of interference would be highly destructive to Part 74 auxiliary broadcast operations -- likely rendering them inoperable.

The type of Little LEO operations proposed in the *Notice* would have the potential to interfere with all types of auxiliary broadcast operations. However, the most significant threat of interference would be to airborne Part 74 receivers, and to receivers located at high elevations, such as on the tops of office buildings. The 455-456 MHz band is heavily used for communications between aircraft and broadcast studio facilities during traffic and live news reports, and these operations are intermittent in nature. If a Little LEO satellite were scanning the terrain to determine what frequencies were in use in a particular area, and then relaying frequency availability information to uplink transmitters on the ground, there is a high probability that one or more broadcast auxiliary transmitters would be activated on an "available" frequency after Little LEO uplink transmissions begin. If this were to happen, the auxiliary broadcast receiver would experience interference until the Little LEO satellite told the Little LEO uplink transmitters that this frequency was no longer available.

Unless the satellite were providing continuous feedback to the uplink transmitters about frequency availability, there would always be periods of interference to Part 74 auxiliary broadcast operations. As an example, if the satellite only scanned for available frequencies once every minute, then it is highly likely that auxiliary broadcast receivers commonly would experience Little LEO interference for periods of up to one minute. This is a longer period of time than it takes to transmit many traffic reports. Thus, Little

LEO interference potentially could wipe out entire traffic reports, or other auxiliary broadcast transmissions, time after time.

The spectrum reallocation being proposed by the Commission in this proceeding is based on the results of the 1995 World Radiocommunication Conference.⁸ Footnote S5.286B of the *Final Acts* requires that any MSS stations in these bands not cause harmful interference to, or claim protection from, fixed or mobile services, such as existing broadcast auxiliary operations. Moreover, Footnote S5.286C of the *Final Acts* mandates that these MSS operations "not constrain" the development and use of these frequencies by fixed and mobile services.

The import of these provisions of the WRC 95 *Final Acts* is that any Little LEO use of the 455-456 MHz band be on an effectively "secondary" basis -- clearly *not* on the kind of co-primary basis contemplated in the Commission's *Notice*. Indeed, and as based on the showing above, the threat of interference to broadcast auxiliary services from such spectrum sharing with Little LEO facilities is so serious as to suggest that the Commission simply should abandon *all* plans for *any* allocation of the 455-456 MHz band for Little LEO operation in this country. This appears also to be the judgment of other administrations around the world.

In this regard we call the Commission's attention to the results of the recently concluded World Radiocommunication Conference (WRC 97) in Geneva, Switzerland. Here, Little LEO proponents completely failed to obtain worldwide support for the use of the 455-456 MHz band for their operations. As a consequence, it would seem that the utter lack of international support for this frequency allocation will very likely subdue

⁸ See *Final Acts of the World Radiocommunication Conference (WRC-95) Geneva, 1995 (ITU 1996)* ("*Final Acts*").

Little LEO operators' interest in this band in the United States. But, regardless of the reaction of domestic Little LEO proponents to the outcome of WRC 97, the results of this international convention provide yet further justification for the Commission to reject this domestic 455-456 MHz reallocation proposal for Little LEOs.

CONCLUSION

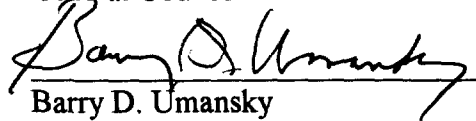
For the reasons stated above, we believe that the potential for 455-456 MHz Little LEO satellite operations to interfere with auxiliary broadcast operations is too great to permit an allocation of this spectrum for this purpose in the United States. We urge the Commission to reject this proposal.

Respectfully submitted,

NATIONAL ASSOCIATION OF
BROADCASTERS



Henry L. Baumann
Executive Vice President and
General Counsel



Barry D. Umansky
Deputy General Counsel

Dave Wilson
Manager, Technical Regulatory Affairs
NAB Science & Technology

December 1, 1997